CLAIMS:

1   1.   A method for processing packets of data comprising the steps of:

2   receiving a packet of data;

3   storing a payload of said packet of data in a buffer;

4   reading a header of said packet of data to extract a value;

5   indexing in a table storing a list of transport control blocks using said value;

6   performing a lock operation on a transport control block in an indexed entry in

7 said table;

8   performing a read operation on said transport control block;

9   transmitting a notification to an application to read said payload, wherein said

10 notification comprises an address of said transport control block; and

11   transmitting said payload of said received packet of data to said application

12 whereby said application does not perform a lock, read, write or unlock operation on

13 said transport control block.

1   2.   The method as recited in claim 1 further comprising the step of:

2   receiving an invocation of a function call from said application upon said

3 application receiving said notification to read said payload.

1   3.   The method as recited in claim 1 further comprising the steps of:

2   performing a write operation on said transport control block;

3   performing an unlock operation on said transport control block; and

4   transmitting an acknowledgment to a transmitting network device.

1   4.   The method as recited in claim 3 further comprising the step of:

2   transmitting an indication of a change in a size of said buffer to said

3 transmitting network device.

1   5.   The method as recited in claim 1 further comprising the step of:

2   transmitting said received payload to a processor to be processed.

1   6.   A computer program product embodied in a machine readable medium for

2   processing packets of data comprising the programming steps of:

3   receiving a packet of data;

4   storing a payload of said packet of data in a buffer;

5   reading a header of said packet of data to extract a value;

6   indexing in a table storing a list of transport control blocks using said value;

7   performing a lock operation on a transport control block in an indexed entry in

8   said table;

9   performing a read operation on said transport control block;

10   transmitting a notification to an application to read said payload, wherein said

11   notification comprises an address of said transport control block; and

12   transmitting said payload of said received packet of data to said application

13   whereby said application does not perform a lock, read, write or unlock operation on

14   said transport control block.

1   7.   The computer program product as recited in claim 6 further comprising the

2   programming step of:

3   receiving an invocation of a function call from said application upon said

4   application receiving said notification to read said payload.

1   8.   The computer program product as recited in claim 6 further comprising the

2   programming steps of:

3   performing a write operation on said transport control block;

4   performing an unlock operation on said transport control block; and

5   transmitting an acknowledgment to a transmitting network device.

1   9.   The computer program product as recited in claim 8 further comprising the

2   programming step of:

3   transmitting an indication of a change in a size of said buffer to said

4   transmitting network device.

1   10.   The computer program product as recited in claim 6 further comprising the

2   programming step of:

3   transmitting said received payload to a processor to be processed.

1   11.   A system, comprising:

2   a communications adapter configured to communicate with an outside

3   network, wherein said communications adapter receives a packet of data from said

4   outside network;

5   a memory unit coupled to said communications adapter, wherein said memory

6   unit stores a table listing a plurality of transport control blocks;

7   a TCP protocol stack running on said communications adapter;

8   a TCP application running on said communications adapter;

9   wherein said TCP protocol stack is configured to perform the following

10   programming steps:

11   storing a payload of said packet of data in a buffer in said memory

12   unit;

13   reading a header of said packet of data to extract a value;

14   indexing in said table using said value;

15   performing a lock operation on a transport control block in an indexed

16   entry in said table;

17   performing a read operation on said transport control block;

18   transmitting a notification to said TCP application to read said

19   payload, wherein said notification comprises an address of said transport control

20   block; and

21   transmitting said payload of said received packet of data to said TCP

22   application whereby said TCP application does not perform a lock, read, write or

23   unlock operation on said transport control block.

1   12.   The system as recited in claim 11, wherein said TCP protocol stack is further

2   configured to perform the following programming step

3   receiving an invocation of a function call from said TCP application upon said

4   TCP application receiving said notification to read said payload.

1.   13.   The system as recited in claim 11, wherein said TCP protocol stack is further

2   configured to perform the following programming steps:

3   performing a write operation on said transport control block;

4   performing an unlock operation on said transport control block; and

5   transmitting an acknowledgment to a transmitting network device.

1   14.   The system as recited in claim 13, wherein said TCP protocol stack is further

2   configured to perform the following programming step:

3   transmitting an indication of a change in a size of said buffer to said

4   transmitting network device.

1   15.   The system as recited in claim 11 further comprising:

2   a processor coupled to communications adapter;

3   wherein said TCP application is configured to perform the following

4   programming step:

5   transmitting said received payload to said processor to be processed.